In the Claims

Please amend the claims as follows.

Claims 1-65 (Canceled).

66. (Currently amended) A ~~CVD~~ system that acquires and analyzes spectral images of a wafer ~~having one or more film properties prior to, during, and/or following a CVD process~~, the system comprising:

a plurality of stations ~~involved in performing one or more aspects of the CVD process~~;

a ~~wafer~~ transfer mechanism ~~disposed within the system~~ operable to transfer the wafer between each of the plurality of stations;

~~means for illuminating~~ an illumination source that illuminates the wafer ~~while~~ as the wafer is ~~transferred~~ transferring between the plurality of stations;

a spectral imager ~~disposed~~ configured to detect light ~~from said illumination means~~ of the illumination source that is reflected from the wafer as the transfer mechanism is transferring the wafer between the plurality of stations, ~~and~~ the spectral imager configured to produce a plurality of one-dimensional spectral frames ~~while said spectral imager and the wafer undergo relative motion provided by said wafer transfer mechanism~~ using information of the light reflected from the wafer as the wafer is transferring between the plurality of stations; and

~~a processing means~~ circuitry for analyzing said plurality of one-dimensional spectral frames~~, where said processing means aggregates sequential~~ and aggregating at least one of the one-dimensional spectral frames to form two-dimensional spectral images ~~and analyzes them~~.

67. (Currently amended) The system of claim 66, ~~where the one or more film properties is~~ wherein the wafer includes a substrate and at least one layer of at least one thin film on the substrate, wherein the at least one thin film includes a plurality of properties, wherein the plurality of properties comprise a thickness value of ~~one of one of the one or more film layers~~ the at least one layer at one or more sites on the wafer.

Claim 68 (Canceled).

69. (Currently amended) A method ~~of obtaining and analyzing a spectral image of~~ for imaging a wafer having one or more film layers ~~prior to, during, and/or following a CVD process~~, ~~the method~~ comprising ~~the steps of~~:

illuminating the wafer with light;

positioning the wafer so that a ~~desired~~ portion of the wafer is illuminated;

detecting light reflected from ~~said desired~~ the portion of the wafer using a spectral imager configured to produce a sequence of one-dimensional spectral frames while ~~said~~ the spectral imager and the wafer undergo relative motion provided by a transfer mechanism ~~used to move wafers between one or more storage and one or more process stations~~ moving the wafer between a plurality of stations;

aggregating said sequence of one-dimensional spectral frames to form a two-dimensional spectral image, and analyzing said two-dimensional image to determine a ~~film layer~~ property of the film layers.

70. (Currently amended) The method of claim 69, ~~where~~ wherein the ~~film layer~~ property is a thickness value of one of the one or more film layers at one or more sites on the wafer.

Claim 71 (Canceled).

72. (Currently amended) A CMP system that ~~acquires and analyzes spectral~~ images ~~of~~ a wafer ~~having one or more film properties prior to, during, and/or following a CMP process~~, ~~the system~~ comprising:

a plurality of stations ~~involved in~~ for performing one or more aspects of ~~the~~ a CMP process;

a wafer transfer mechanism disposed within the system to transfer the wafer between said stations;

~~means~~ a light source for illuminating the wafer while the wafer ~~is transferred~~ transfer mechanism is transferring the wafer between the stations;

a spectral imager disposed to detect light from ~~said illuminating means~~ the light source that is reflected from the wafer and configured to produce a plurality of one-dimensional spectral frames while said spectral imager and the wafer undergo relative motion provided by said wafer transfer mechanism; and

~~means~~ circuitry for processing said plurality of one-dimensional spectral frames, ~~where said processing means~~ wherein the circuitry aggregates sequential one-dimensional spectral frames to form a two-dimensional spectral image, and analyzes said two-dimensional spectral image to determine one or more ~~film layer~~ properties of one or more film layers of the wafer.

73. (Currently amended) The system of claim 72, ~~where~~ wherein the one or more ~~film layer~~ properties ~~is~~ include a thickness value of one of the one or more film layers at one or more sites on the wafer.

Claim 74 (Canceled).

75. (Currently amended) A method ~~of obtaining and analyzing a spectral image of~~ for imaging a wafer having one or more film layers ~~prior to, during, and/or following a CMP process~~, ~~the method~~ comprising ~~the steps of~~:

illuminating the wafer with light;

positioning the wafer so that a ~~desired~~ portion of the wafer is illuminated;

detecting light reflected from ~~said desired~~ the portion of the wafer using a spectral imager configured to produce a sequence of spatially contiguous one-dimensional spectral frames while said spectral imager and the wafer undergo relative motion provided by a transfer mechanism used to move wafers between ~~one or more storage and one or more process~~ stations; and

aggregating said frames to form a two-dimensional spectral image~~; and~~

~~analyzing said two-dimensional spectral image~~.

76. (Currently amended) The method of claim 75, ~~where~~ further comprising analyzing the two-dimensional spectral image, wherein analyzing ~~said two-dimensional~~

~~spectral image~~ determines a film layer thickness value of one of the one or more ~~films~~ film layers at one or more sites on the wafer.

Claim 77 (Canceled).

78. (Currently amended) A semiconductor wafer processing system that acquires and analyzes spectral images of a wafer prior to, during, and/or following a process, the system comprising:

a plurality of stations ~~involved in performing one or more aspects of the system process~~;

a wafer transfer mechanism disposed within the system to transfer the wafer between the stations;

~~means~~ a light source for illuminating the wafer while the wafer is transferred between said stations;

a spectral imager disposed to detect light from ~~said illuminating means~~ the light source that is reflected from the wafer, ~~and where said~~ the spectral imager ~~is~~ configured to produce a plurality of one-dimensional spectral frames while said spectral imager and the wafer undergo relative motion provided by said wafer transfer mechanism; and

a ~~processing means~~ processor for analyzing said plurality of one-dimensional spectral frames, ~~where said processing means~~ wherein the processor aggregates sequential one-dimensional spectral frames to form two-dimensional spectral images.

Claims 79 and 80 (Canceled).

81. (Currently amended) The system of claim 78, ~~where~~ wherein the process ~~is one of:~~ includes one or more of a CVD process, a CMP process, or a stand-alone metrology process.

82. (Currently amended) The system of claim 78, ~~where~~ wherein the stations include one ~~of:~~ or more of a load station, an unload station, or a process station.

83. (Currently amended) The system of claim 78, ~~where said illuminating means~~ wherein the lights source is ~~either~~ one of pulsed or continuous while said spectral imager detects light.

84. (Currently amended) A semiconductor wafer processing system that provides and analyzes spectral images of a wafer having one or more film layers prior to, during, and/or following a process, the system comprising:

a wafer transfer mechanism disposed within the system to transfer the wafer between a load station and a wafer chuck;

~~means~~ a light source for illuminating the wafer while the wafer is transferred between said load station and said wafer chuck;

a spectral imager disposed to detect light reflected from the wafer and configured to produce a one-dimensional spectral frame while said spectral imager and the wafer undergo relative motion of transferring the wafer; and

a processor that analyzes said one-dimensional frame.

Claims 85 and 86 (Canceled).

87. (Currently amended) A semiconductor wafer imaging system that acquires and analyzes spectral images of a wafer having one or more film layers ~~prior to and/or following a process~~, the system comprising:

a first processing system that performs a first manufacturing ~~step~~ process on the wafer;

a second processing system that performs a second manufacturing ~~step~~ process on the wafer, where said second manufacturing ~~step~~ process follows said first manufacturing ~~step~~ process;

a wafer transfer mechanism disposed to transfer the wafer between said first processing system and said second processing system;

~~means~~ a light source for illuminating the wafer while the wafer is transferred between said first processing system and said second processing system;

a spectral imager disposed to detect light from ~~said illuminating means~~ the light source that is reflected from the wafer during the transfer, and ~~where said spectral imager is~~ configured to produce one-dimensional spectral frames; and

~~means~~ circuitry for aggregating said one-dimensional spectral frames to form a two-dimensional spectral image and analyzing said two-dimensional spectral image to determine a film layer property of the one or more film layers.

88. (Currently amended) The system of claim 87, ~~where~~ wherein the one or more film layer properties ~~is~~ include a thickness value of one of the one or more film layers at one or more sites on the wafer.

89. (Currently amended) A method of obtaining and analyzing a spectral image of a wafer having one or more film layers ~~between two wafer manufacturing processes~~, the method comprising ~~the steps of~~:

securing the wafer from a first processing system using a transfer mechanism ~~to secure the wafer from a first processing system that performs a first manufacturing step on the wafer~~;

illuminating the wafer with light from a light source;

positioning the wafer using said transfer mechanism so that a ~~desired~~ portion of the wafer is illuminated by light from said light source;

detecting light reflected from said ~~desired~~ portion of the wafer using a spectral imager configured to produce a sequence of contiguous one-dimensional spectral frames while said transfer mechanism moves the wafer;

aggregating said sequence of contiguous one-dimensional spectral frames to form a two-dimensional spectral image;

analyzing said two-dimensional image to determine one or more film layer properties of the one or more film layers; and

transferring the wafer to a second processing system ~~that performs a second manufacturing step on the wafer~~.

90. (Currently amended) The method of claim 89, ~~where~~ wherein the one or more film layer properties ~~is~~ include a thickness value of one of the one or more film layers at one or more sites on the wafer.

Claims 91-155 (Canceled).